A Research Proposal of the Ph.D. thesis

A STUDY OF TEACHING STYLE OF UNIVERSITY TEACHERS IN RELATION TO THEIR INNOVATIVENESS AND ICT COMPETENCIES

Submitted by

Amit Kumar

Ph. D. Scholar (Session 2020-21)

in fulfillment for the award of the degree of

DOCTOR OF PHILOSOPHY

IN

EDUCATION

Under the Supervision of

Dr. Nivedita

Professor, Department of Education, CDLU Sirsa

CHAUDHARY DEVI LAL UNIVERSITY SIRSA (Haryana)

INTRODUCTION

For many years, the direct lecture method was the primary instructional method used by most teachers (Santrock, 2006). It was more instructor-focused with the objective of transferring knowledge, skill and information from the instructor to the learners. In this context, the instructor controls the course content and pace. However, educational research has demonstrated that learners learn best when they are able to learn through discovery, setting the pace of their learning with the instructor coaching, mentoring or facilitating their knowledge, skill and information acquisition. This teaching methodology is described as learner-focused (Santrock, 2006).

Edward Thorndike suggested that the most important task of education is to sharpen the reasoning skills of learners (Beatty, 1998). The work of Dewey and Thorndike were consistent with the constructivist teaching strategies. Constructivism posits that people actively construct knowledge and understanding. Constructivists suggest that instead of teachers delivering lectures in a manner that indicates pouring knowledge into learners, students should be allowed to investigate and discover their world and knowledge, reflect, and think critically about the knowledge (Ambrose, 2004; Brooks & Brooks, 2001; Magolda, 2004).

This school of thought is based on the components of effective teaching. Generally, as found by educational psychologist, the following factors characterize effective teaching: appropriate goal-setting and instructional planning, classroom management skills, motivational skills, communication skills, working effectively with learners from diverse backgrounds, technological skills and commitment (Santrock, 2006). In summary, effective teachers create a motivating classroom environment. The physical and

psychological environment they develop encourages students to do their optimal best in both character and academic formation. They have adequate expectation of their students and construct a curriculum that challenges and motivates students to do well (Njoku, 2013). Therefore, their teaching can produce adequate results regardless of the use of traditional direct-instruction or active learning modality.

However, due to differences in learners' characteristics, both teaching methodologies could be incorporated to provide an engaging, challenging and enriching learning environment. These include reading, writing, discussions, and engagement in group work or problem solving tasks in the classroom. These activities could be the primary means of conveying knowledge to students or be termed as teaching styles.

In other words, the notion of style refers to a person's preferred way of using his abilities (and in this way differs from ability), and is a very important factor in trying to account for the marked individual differences in performance shown by people as they think, learn, teach, or carry out various tasks (Messick, 1984; Riding & Cheema, 1991; Sternberg & Grigorenko, 1997; Tennant, 1988; Witkin, Oltman, Raskin, & Karp, 1971). Since the 1950s, psychologists have been investigating the nature of various types of styles, such as cognitive, thinking, teaching and learning styles, and their effects on performance in both academic and non-academic settings (Goldstein& Blackman, 1978; Kogan & Saarni, 1990; Rayner & Riding, 1997; Sternberg &Grigorenko, 1997; Witkin & Goodenough, 1981). The term teaching styles appeared around the 1970s (Biggs, 2001) when interest began to focus on the role of styles in teaching and learning.

Teaching is a performing art. Excellent teachers use their voices, gestures and movements to elicit and maintain attention and to stimulate student's emotions. Like other performers, teachers must convey a strong sense of presence, of highly focused energy. Teaching styles include interdisciplinary methods that promote learning material that is associated with two or more disciplines, and laboratory work. Another active teaching method that integrates technology is termed "flipped classroom." Teachers who implement flipped classroom prepare their lecture in visual electronic format so that students listen or watch the lectures, demonstrations and explanations of the learning material at home and class time is then spent on completing assignment (also called homework). The teacher's role in the class is to offer one-on-one assistance to students and clarify the assignments as needed. As can be noted from the assignment, the classroom is called "flipped" because the traditional classroom activity is done at home by students and the homework is completed in the classroom. The flipped classroom was initiated by Jon Bergmann and Aaron Sams (Channel Tech Smith, December 2, 2010).

Types of Teaching Styles

Grasha (1996) argued that there are five main teaching styles that are linked to different outcomes in childhood. They are Expert, Formal Authority, Personal Model, Facilitator, and Delegator. The expert possesses the information, knowledge and skills that students need; however, if this knowledge is over-used in the classroom, it may lead to students becoming intimidated by the teacher's fruitful base of knowledge (Grasha, 1996). The formal authority teacher focuses on a clear and methodical way of conducting class paired with firm expectations (Grasha, 1996). However, an overinvestment in this style can lead to rigid, standardized and less flexible way of managing students and student concerns

(Grasha, 1996). A teacher who teaches by personal example and who encourages students to observe and emulate the teacher's approach is said to utilize a personal model (Grasha, 1996). In this model, emphasis is placed on observation and following the teacher as a role model (Grasha, 1996). Teachers who utilize this approach tend to feel that their approach is the most effective as a means for instruction. Grasha (1996) reports that this may lead to feelings of inadequacy if the students cannot live up to such expectations and standards.

The facilitator style is characterized by a focus on the personal nature of the student–teacher interaction (Grasha, 1996). Teachers who exhibit this style would offer a great deal of flexibility in their teaching and be more prone to a 'student-centered' approach, paired with a willingness to explore alternate ways of completing tasks (Grasha, 1996). However, this approach, if not executed in a positive and affirming manner, may lead to students feeling uncomfortable in the classroom due to general uncomfortable feelings in response to the open and expressive atmosphere (Grasha, 1996). Finally, Grasha (1996) states that the delegator style does much to emphasize the student as an independent learner, but the style can be time consuming and may result in misreading of students' readiness to take on independent work. Grasha (1996) cautions that the delegator may contribute to student anxiety as the student may be given too much autonomy before they are ready to take it on. Therefore, it would seem from Grasha's findings that various teaching styles can either aid or hinder the learning process. Dressel and Marcus (1982) and Woods (1995), categorized teaching styles as discipline-centered, teacher-centered, and student-centered. In discipline centered model, the course has a fixed structure. In teacher-centered model, the teacher is considered as an authoritative expert, the main source of knowledge, and the focal point of all activity. In this teaching model, students

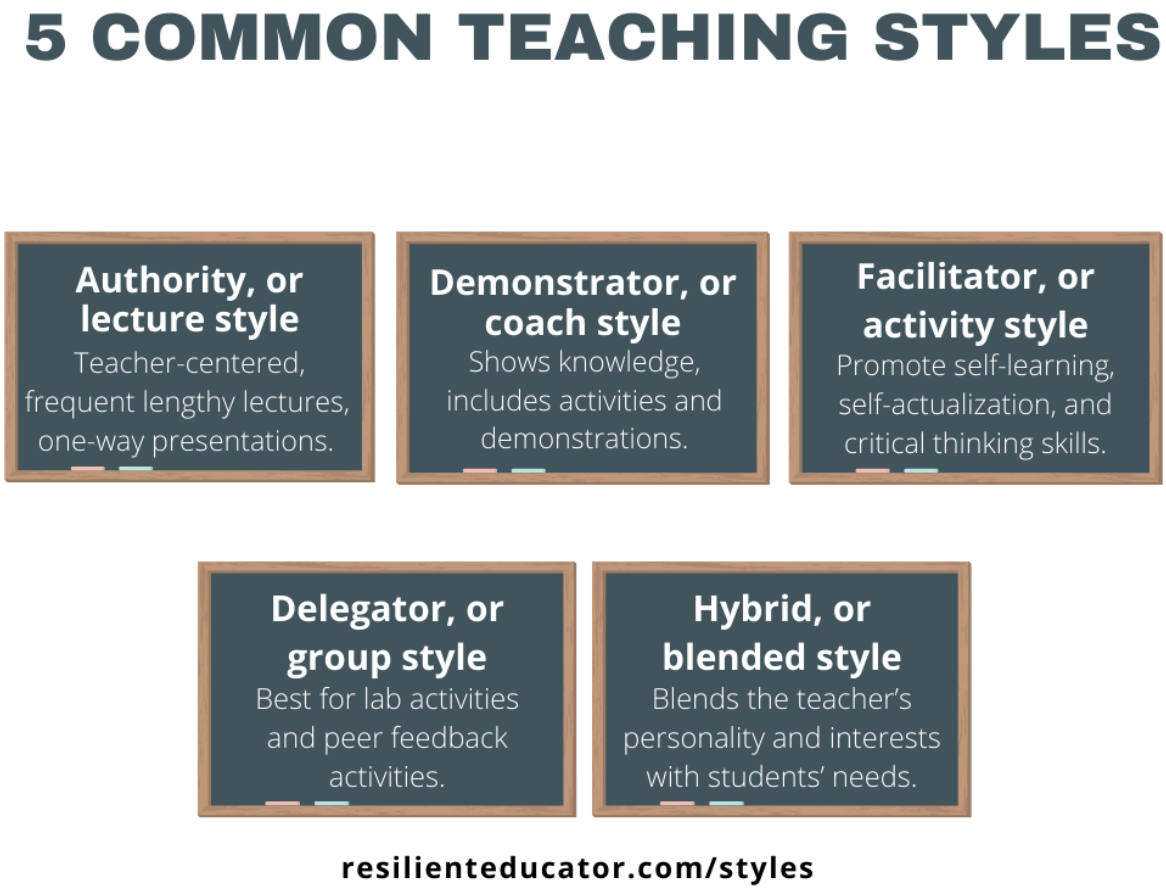
are passive recipients of the information. According to Lackey (1997), lecture obviously reflects teacher-centered style and requires a passive role for students. In student-centered model, on the other hand, instruction focuses on the student and his/her cognitive development. The teacher's goal is to help students grasp the development of knowledge as a process rather than a product. Flanders (1970) used different terminology and named teacher-centered teaching as direct style, student-centered teaching as indirect style and discipline-centered teaching as eclectic style. Weinberg (1983) also did some work on teaching styles and identified the following four teaching styles: direct teaching, peer teaching, problem solving, and group approach. First, in direct teaching style, the teacher makes all of the decisions. S/he describes and demonstrates what is to be learned, evaluates it and gives feedback. This style needs very little cognitive or affective involvement on the student's part.

Second, peer teaching style pairs two students of differing ability levels with one another. The teacher describes and demonstrates the desired response. The students evaluate each other using criteria presented by the teacher. Third, in problem solving style, the teacher sets a problem and the students respond it in most appropriate ways for them. Models come from student creativity and other students' responses. And last, group approach style is used to foster social skills as well as promote acceptance among different ability levels. Briefly, it looks meaningful to summarize that teacher-centered style is traditional and requires lecture. In discipline-centered style, however, teachers appear to place subject matter knowledge as the central focus of their beliefs and actions instead of placing teaching or students at the center. Programmed learning materials, printed study guides, prepared curricular materials, and research papers can be used (Lackey, 1997). Discipline-centered teaching strategies tend to be teacher-

centered, but also include hands on activities, laboratories, demonstrations, group work and discussion. Therefore, this technique creates students with positive learning environment to clarify their understanding and present their ideas (Patricia, et.al., 1999). In short, discipline-centered teaching style has characteristics of both teacher-centered style and student-centered style. Hence, using disciplinecentered style as transitional style may be acceptable. In student-centered style, activities such as group discussions and group or individual reports are used (Lackey, 1997). This style is individualized to provide accommodation to students' cognitive, affective, behavioral and physical needs during the teaching and learning process (Shreves, 1998). It seems from these two statements that student-centered style refers to individualized teaching approach. Berger (1974), in addition, determined three kind of teaching behaviors as teacher oriented, student oriented, and student-teacher cooperation oriented. Lenz (1982) identified two teaching styles: proactive and reactive. Robinson (1979) categorized teaching styles into five classes ranging from "highly content centered" to "highly people centered". Alexlord (1970) identified five teaching styles a) drill master b) content-centered c) instructor centered d) intellect centered and e) person centered.

In light of the theory of Mental Self-Government, Sternberg (1997) proposed seven teaching styles consisting of only Type I and Type II styles, and operationalised them through the Thinking Styles in Teaching Inventory (TSTI; Grigorenko &Sternberg, 1993). This inventory deals with just three of the five dimensions of thinking styles (function, level, and leaning). The seven styles in teaching are: (1) the legislative style, whose central characteristic is creative; (2) the executive style, whose central characteristic is conforming; (3) the judicial style, whose central characteristic is analytical; (4) the local style, whose central

characteristic is focusing on concrete ideas or details; (5) the global style, whose central characteristic is focusing on abstract thinking or general problems; (6) the liberal style, whose central characteristic is employing new ways to deal with tasks (the liberal style differs from the legislative style in that the creativity or new ideas used by the liberal person do not have to be the individual's own); and (7) the conservative style, whose central characteristic is employing traditional ways to deal with tasks (unlike the executive style, an individual with a conservative style may like to come up with his/her own ideas, but these ideas are based on existing and accepted customs).


5 COMMON TEACHING STYLES
Authority, or lecture style
Teacher-centered, frequent lengthy lectures, one-way presentations.
Demonstrator, or coach style
Shows knowledge, includes activities and demonstrations.
Facilitator, or activity style
Promote self-learning, self-actualization, and critical thinking skills.
Delegator, or group style
Best for lab activities and peer feedback activities.
Hybrid, or blended style
Blends the teacher's personality and interests with students' needs.
resilienteducator.com/styles

Innovativeness

In today's world, a new technology penetrates into our daily lives every new day. Technological innovations force individuals to renovate themselves. In

order to be successful in business life, institutions and individuals should keep up with these innovations (Sabherwal, Hirscheim and Goles, 2001). University Grants Commissions(UGC), Department of Higher Education(DHE) and Ministry of Human Resource Development(MHRD), State Council of Educational Research and Training (SCERT) and National Education Policy (2020) directing especially the institutions are also supposed to keep up with the innovations.

Innovativeness may be defined as "the degree to which an individual is relatively earlier in adopting an innovation than other members of his system" (Rogers & Shoemaker, 1971), where "relatively earlier" refers to actual, rather than perceived, time of adoption. Innovativeness is a persistent trait or disposition that determines how an individual perceives and reacts to an innovation (Yi et al., 2006), where a high level of innovativeness would yield a more positive reaction. Individual innovativeness is often studied in the context of diffusion of innovation, particularly relating to consumers and their willingness to adopt innovative new products (Midgley & Dowling, 1978) and the propensity of organizational members to seek external knowledge (Tortoriello, 2006). However, this study adopts a more generalized perspective of individual innovativeness that affects how an individual perceives and reacts to new ideas, inventions, or ways of doing things as well as the individual's propensity to improvise, generate original ideas, and accept challenges (Hurt, Joseph, & Cook, 1977). This would allow for an authentic investigation of the influence of innovativeness on an individual's satisfaction with life.

Studies on innovation and innovativeness

In related literature date back to 1965 and 1970s, yet they have generally focused on the field of business. Most of these studies were carried out to

determine the characteristics of adjustment to innovation and innovativeness in organizations (Damanpour and Schneider, 2009; Damanpour and Schneider, 2006). It was also seen that some studies in related literature focused on a certain innovation. One study carried out with 142 teachers by Könings, Gruwel and Merrienboer (2007) examined teachers' perceptions of innovations in learning environments with respect to such variables as years of teaching, gender and the number of courses taught. Besides these studies, in some other studies, a certain technology, technologies in general, was considered as an innovation parallel to technological developments. As an example, one study examined how features perceived as MMS (Multimedia Messaging Service) differed with respect to categories of innovativeness (Hsu, Lu and Hsu, 2007). Another study was conducted to investigate the innovativeness profiles of faculty regarding the adoption of new instructional technology into the instructional process (Hall and Elliott, 2003). Similarly, in another study, the relationship between the categories of innovativeness and technology use levels of faculty in computer use for instructional purposes (Sahin and Thompson, 2006). It is seen in literature that studies related to innovativeness have a tendency towards the investigation of technology adaption parallel to technological developments. These studies examined individuals' technology adaption and innovativeness with respect to the adopter innovativeness category based on the model of Diffusion of Innovation developed by Rogers(Lin, 2004; Sahin and Thompson, 2006; Vishwanath and Chen, 2006). In addition, it is seen that studies on innovativeness generally focused on educational change. According to the overall results of these studies, innovativeness of an individual influences educational change (Tondeur, Devos, Van Houtte, Van Braak and Valcke, 2009; Hannon, 2009).

ICT (Information and Communication Technology) Competencies

Teachers need to improve knowledge and skills to enhance, improve and enrich their teaching practices. Many of the studies on competencies of teachers focus on the teaching role of teachers in the classroom rather than their competencies. Competencies are defined as "the set of knowledge, skills, and experience necessary for future, which manifests in activities" (Katane et.al.). Gupta (2008) defines competencies as "knowledge, skills, attitudes, values, motivations and beliefs people need in order to be successful in a job."

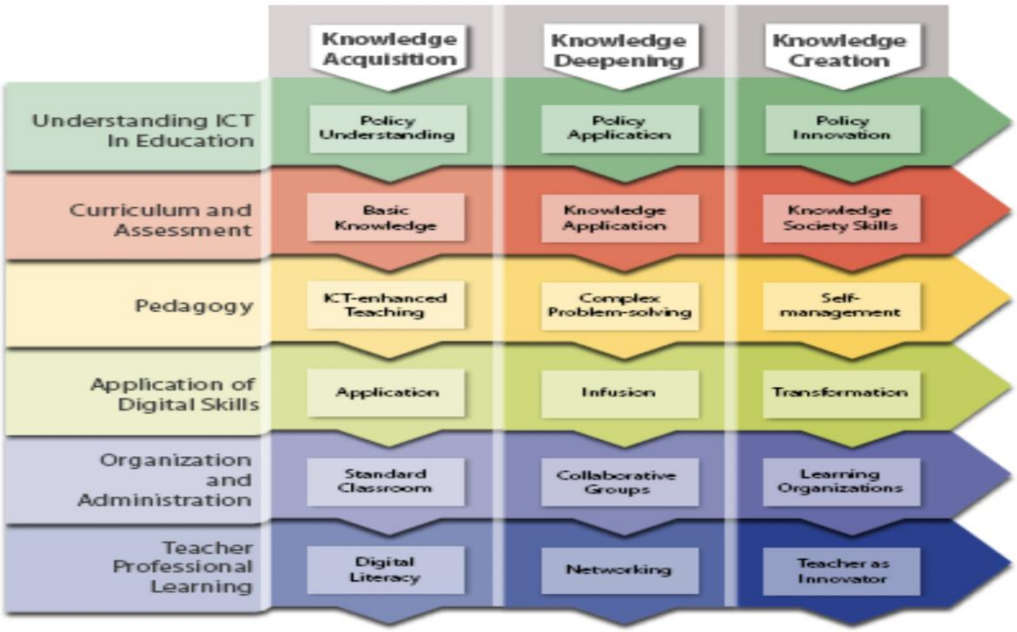
ICT competencies are based on using tools and technical equipments for the reaching, disturbing and transferring the knowledge. These include any technology that helps to produce, manipulate, store, communicate, and/or disseminate information. ICT competencies can play a very important role in improving the communication in teaching learning process.

The ICT Competencies are a set of technology standards that define proficiency in using computer technology in the classroom. The competencies consist of computer-related skills grouped into four general domains: (1) Basic Technology Operation, (2) Personal and Professional Use of Technology Tools, (3) Social, Ethical, and Human Issues, and (4) Application of Technology in Instruction.

Importance of ICT Competencies for Teachers

Teaching is a complex activity. Competent teachers apply broad, deep, and integrated sets of knowledge and skills as they plan for, implement, and revise instruction. Technology proficiency (including technical skills and instructional applications) is but one dimension of teacher competence.

The acquisition of technology knowledge and skills must be connected with the development of a broader array of competencies. Early attempts to develop technology standards for teachers were isolated from the broader teacher competencies and were focused primarily on technology skills.



Source: en.unesco.org

UNESCO's ICT Competency Standards for Teachers (ICT-CST) asserts: overall goal is to improve teacher practice, contribution to a higher quality education system for a better informed citizenry and higher quality workforce. UNESCO's framework emphasizes that acquiring ICT skills and be able to teach them to students is not enough for teachers. Teachers need to be able to mould students to become collaborative, problem-solving, creative learners through using ICT so they will be capable citizens and productive members of the workforce. The framework addresses all three different approaches to teaching: technology literacy, knowledge deepening, and knowledge creation. The first teaching approach aimed to let students use ICT to learn more efficiently. The second

teaching approach enables students to acquire an in-depth understanding of their school subjects and use it for complicated and real-world problems. The third teaching approach allows students to create the new knowledge required for more harmonious, fulfilling and prosperous societies.

REVIEW OF LITERATURE

RATIONALE OF STUDY

The world is undergoing rapid changes in the knowledge landscape. With various dramatic scientific and technological advances, such as the rise of big data, machine learning, and involving mathematics, computer science, and data science, in conjunction with multidisciplinary abilities across the sciences, social sciences, and humanities, will be increasingly in greater demand (NPE-2020). Recalling the examples from our ancient Indian universities Takshashila, Nalanda, Vallabhi, and Vikramshila, which had thousands of students from India and the world studying in vibrant multidisciplinary environments, amply demonstrated the type of great success that large multidisciplinary research and teaching universities could bring. A quality higher education must enable personal accomplishment and enlightenment, constructive public engagement, and productive contribution to the society. Coherently, Teacher's teaching style truly shape our next generation of citizens. It is must to do, everything to empower our teachers and help them to do their job as effective, more vibrant, socially engaged, professional, technically competent and innovative.

Innovation in education is especially significant, considering the young minds molded by the education system today will be those leading the charge for innovation tomorrow. And if the rapidly changing needs of the current workforce are any indication of what's to come for future generations, this investment will be necessary in order to continue making progress at the speed

and quality that we are today. To catch up, educators must update the outdated processes and approaches defining schools and universities across the country, and introduce practices that better prepare students to function in the future. This includes, most prominently, changes in curricula and hands-on exposure to the expansive digital tools being used across transitional society today.

Many professionals have ideas about how they might improve the educational system, yet very few possess the tools and support needed to turn their passion from an abstract idea into a reality. This study will lead to a significant approach, to meet new expectations of Society, Nation and World. It will be a milestone to ascertain developed outlook of education system into realm of life. Leading towards advance competencies in using ICT and innovations, by the time they are ready to start necessary training and guidance needed in this complex sector of education.

STATEMENT OF THE PROBLEM

"A STUDY OF TEACHING STYLES OF UNIVERSITY TEACHERS, IN RELATION TO THEIR INNOVATIVENESS AND ICT COMPETENCIES".

DEFINING KEY TERMS

Teaching Style: Teaching styles refer to a teacher's preferred way of solving problems, carrying out tasks, and making decisions in the process of teaching, and, besides differing from individual to individual, may sometimes differ between different groups, for example schools or College.

University Teachers: The teaching faculty of universities including Assistant Professor, Associate Professor and Professor in universities in Haryana state in India.

Innovativeness: Individual's ability to adopt new ideas into practice, in other words " the degree to which an individual is earlier in adopting new ideas than other members of a social system and classifies adopters based on the time at which they adopt an innovation.

ICT (Information and Communication Technology) Competencies: ICT competencies consist of knowledge, skills and practices related to effective use of Information & Communication Technology to produce, manipulate, store, communicate and/ or disseminate information.

OBJECTIVES

The following objectives will be delineated on the basis of the statement of problem of the study:

1. To identify the teaching styles of university teachers with respect to their gender, stream, experience and locale.
2. To compare the teaching style of university teachers with respect to their gender, stream, experience and locale.
3. To compare the innovativeness of university teachers with respect to their gender, stream, experience and locale.
4. To compare the ICT competencies of university teachers with respect to their gender, stream, experience and locale.
5. To study the relationship between Teaching style and innovativeness of university teachers.
6. To study the relationship between Teaching style and ICT Competencies of university teachers.
7. To study the effect of Innovativeness and ICT Competencies on Teaching style of university teachers.

HYPOTHESES

In order to realize the stated objectives, the following hypotheses are formulated.

1. There will be no significant difference between teaching styles of university teachers with respect to their gender, stream, experience and locale.
2. There will be no significant difference between innovativeness of university teachers with respect to their gender, stream, experience and locale.
3. There will be no significant difference between ICT competencies of university teachers with respect to their gender, stream, experience and locale.
4. There will be no significant relationship between Teaching styles and innovativeness of university teachers.
5. There will be no significant relationship between Teaching styles and ICT Competencies of university teachers.
6. There will be no significant effect of innovativeness and ICT Competencies on teaching styles of university teachers.

RESEARCH METHODOLOGY

Research Method: Keeping in view the nature of the study, the descriptive research method will be used to study the innovativeness and ICT Competencies on teaching styles of university teachers, teaching in Haryana.

Population: The target population will be Assistant Professors, Associate Professors and Professors, teaching in various 43 universities in Haryana.

Sample Size: The sample of 400 university teachers i.e. Assistant Professors, Associate Professors and Professors teaching in Haryana state will be selected by using appropriate sampling technique.

Tools to be Used

Based on the research problem and objectives of the study, the following steps would be undertaken to select and develop the data collection tool. The tool would be developed or pertinently adopted after the extensive review of literature on relevant topics and after discussion with experts and supervisor.

Selection of Tools

- **Teaching Style Scale** by Sapna Sharma and Divya Saran available in Both Hindi and English. This scale consists of 60 items based on five area areas 1. *Expert*, 2. *Formal Authority*, 3. *Demonstrator*, 4. *Facilitator* and 5. *Delegator*. It was administered on 250 senior secondary teachers.
- **Innovation Scale** propounded by D. M. Pastonjee, Naresh N. Mehta and S. M. Khan available in Both Hindi and English. This scale is structured with 100 test items. It can be administered on age range of 25 to 62 Years.
- **ICT Competencies Assessment Scale** (ICT CAS) for University Teachers will be developed and standardized by the researcher to ascertain authenticated results.

Statistical Technique

Appropriate statistical techniques would be applied to carry out analysis and interpretation of data, in order to reach valid and concrete conclusion.

DELIMITATIONS OF THE STUDY

The study will be delimited to University Teachers, i.e. Assistant Professors/Associate Professors/Professors, who are teaching in various universities *(recognized by UGC)* in Haryana state of India.

REFERENCES

Berger, C. F. (1974). A comparison of science teaching behavior with a theoretical construct. (ERIC Document Reproduction Service o. ED 091 189).
Biggs, J. B. (2001). Enhancing learning: A matter of style or approach? , Perspectives on thinking, learning, and cognitive styles (pp.. 73–102). London:Lawrence Erlbaum Associates.
Felder, R.M., & Silverman, L.K. (1988). Learning and teaching styles in engineering education. Engineering Education, 78, 674–681.
Grasha, A. F. (1996). Teaching with Style: Pittsburgh, PA: Alliance Publishers.
Kolb, D.A. (1981). Learning styles and disciplinary differences. In A.W. Honey, P., & Mumford, A. (1992). The manual of learning styles.
Riding, R. J., & Cheema, I. (1991). Cognitive styles: An overview and integration. Educational psychology, 11, 193–215.
Sternberg & L. F.Zhang (Eds.), Perspectives on thinking, learning, and cognitive styles (pp. 73–102). London: Lawrence Zhang, Erlbaum Associates.
Sternberg, R. J. (1997). Thinking Styles. New York: Cambridge University Press
Woods, D. R. (1995). Teaching and learning: what can research tell us? Journal of College of Science Teaching, 25, 229-232.
Zhang,L.F.,(2002a).Thinking styles and Big Five Personality Traits.Educational Psychology,22,17-31.